

GUIDE FOR AUTHORS

for the Publications Series
of the British Columbia

WATERSHED RESTORATION PROGRAM

for

**Watershed Restoration Management Reports
Watershed Restoration Technical Circulars
Watershed Restoration Project Reports**

by

D.O. Zaldokas

**Watershed Restoration Project Report No. 11
1997**



**Watershed Restoration Program
Ministry of Environment, Lands and Parks
and Ministry of Forests**

The formatting and images in this document may vary slightly from the printed version

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INTRODUCTION

Staff of the Ministry of Environment, Lands and Parks and the Ministry of Forests act as editors for publications in the British Columbia Watershed Restoration Program (WRP) Publications Series, under the auspices of the Forest Renewal Plan. This guide for authors has been designed to assist and standardize publications for WRP. Ministry of Environment, Lands and Parks, Ministry of Forests and Department of Fisheries and Oceans staff, as well as forest companies and consultants, who desire to have results of workshops, procedural guides and monitoring projects published in the British Columbia Watershed Restoration Program Publications Series may submit articles according to the instructions provided here. Some procedural guides and results of monitoring studies will also be published within other publication series of the two ministries, particularly where there is an overlap with the Forest Practices Code.

Draft reports are encouraged which present new information in fisheries, forestry sciences and watershed management related to watershed restoration; i.e., watershed assessment and prescription procedures, as well as hillslope, riparian, stream channel and fish habitat rehabilitations, and evaluations of restoration projects. Manuals and procedural guidelines will be published, as will innovations and new approaches to assessment, restoration and mitigation. Parts or aspects of the results of studies may be published later or simultaneously in a primary journal, the latter being encouraged. Reports are selected for the type of publication in the series according to the extent and significance of new knowledge or ideas presented in reference to watershed restoration in British Columbia, including the intent as training or reference material.

It is crucial that there is a formal mechanism to provide for technical transfer in the Watershed Restoration Program in both the short- and long-term. Our ancillary goal is to assist with the resolution of a professional dilemma, i.e., "grey literature". For a detailed discussion of the uncontrolled growth of grey literature, see Wilbur (1990) in Fisheries, Volume 15(5):2-6. Also, publication within the Watershed Restoration Program Series can be important as evidence of scientific or technical accreditation because of peer review within and external to the Program. Peer review is a requirement in the WRP Publications Series.

In the WRP Publications Series, there are three types of publications: Watershed Restoration Management Reports, Watershed Restoration Technical Circulars, and Watershed Restoration Project Reports.

Watershed Restoration Management Reports

Manuscripts submitted and accepted as Watershed Restoration Management Reports (WRMR) have significant province-wide watershed management implications and include results from long-term studies, rigorous evaluations, technical workshops or conferences and literature reviews. Management reports provide conclusions or recommendations of significance to the overall program, usually on a provincial scope, which may alter management of WRP and B.C.'s natural resources.

Watershed Restoration Technical Circulars

Watershed Restoration Technical Circulars (WRTC) present significant technical information, as manuals or guides to be utilized for training, education and field references. Flexibility in formatting is required for manuals and guides (see WRP procedural guides).

Watershed Restoration Project Reports

Watershed Restoration Project Reports (WRPR) present results of studies, compilations of progress reports, bibliographic surveys, and planning documents. This provides an alternative to regional project report series, assuming broader provincial and US state circulation.

MANUSCRIPT SUBMISSION

Submit 2 photocopies of the manuscript, as well as a disk with the manuscript in the latest version of Microsoft Word to the Manager, Technical Coordination of the WRP, at the address on the inside cover page, accompanied by a covering letter or memorandum that clearly states the main points and significance of the work. Indicate whether it is submitted as a potential **Watershed Restoration Management Report, Technical Circular, or Project Report**. Thus, the Manager for the WRP (or designate) will assume the role of senior editor in arranging the review and editorial process. Original typescripts and figures are best retained by the author until the final draft has been reviewed and accepted.

Each manuscript is reviewed and edited by a biologist, forestry scientist, geoscientist or engineer knowledgeable with the topic and literature. **Watershed Restoration Management Reports** will receive greater review, preferably including an external referee. The main reviewer will recommend to the editor which is the more appropriate contribution (Management Report, Technical Circular or Project Report). This will depend not only on the type of study, but also on completeness, broadness of applicability, and attention to the scientific method (evaluations). Reviewers' comments will be as constructive as possible, but authors submitting manuscripts must accept that some will not be published because of the preliminary nature or incomplete content of the investigation: these are more suited as WRP progress/project reports, which are retained in District and Regional offices. Publications will be Catalogued In Publication (CIP) by the Legislative Library of B.C.

EDITORIAL PRACTISES

The Council of Biology Editors Style Manual (5th edition, CBE, 9650 Rockville Pike, Bethesda, MD 20814) is used as the general authority in matters of format. The standard for spelling is the Oxford English Dictionary. Authors are responsible for consistency in spelling. To maintain simplicity, titles of periodicals or journals are written out in full in the references rather than abbreviated. Authors are responsible for ensuring the accuracy and completeness of their reference list. Authors should follow the names and spelling recommended in "A List of Common and Scientific Names of Fishes from the United States and Canada" (4th edition 1980), Special Publication No. 12, American Fisheries Society (AFS); "Forestry Handbook", author Karl F. Wenger (2nd edition 1984), John Wiley & Sons, Inc. Toronto, and "Style Guide for Research Publications", author Georgina Montgomery (2nd Revised Edition 1985), B.C. Ministry of Forests, Research Branch, Victoria. All measurements must be metric, use SI symbols in most instances, and adhere to the Canadian Metric Practice Guide CAN3-Z234.1-79 (Canadian Standards Association, 178 Rexdale Boulevard, Rexdale, ON M9W 1R3).

An abstract is required for all manuscripts and should state concisely what was done, found, and concluded in less than 300 words. (Note that the abstract may be truncated to less than 200 words by some indexing services. Watershed management and protection implications should be emphasized where possible within the abstract.

Proofs are sent to the author, who is fully responsible for correcting errors made in the revision process. Alterations to the content at this time should be avoided unless there are errors. Authors should estimate how many reports are required. One hundred to five hundred copies are typically printed, depending on anticipated demand and external distribution.

GENERAL GUIDELINES FOR PREPARATION OF MANUSCRIPTS

The rate of review and processing of manuscripts is faster if manuscripts are prepared in the style and format similar to the Canadian Journal of Fisheries and Aquatic Sciences (full capital letters and centred main titles are an exception which is a format common to AFS publications). When in doubt about specific details, consult a 1995 or later WRP publication. General guidelines are:

- 1) Print the manuscript on white paper (2 copies, as well as the copy on disk), preferably 21.5 cm X 28 cm (8.5 in. X 11 in.), on only one side of the page. Leave all margins at least 2.5 cm (1 in.) wide. All manuscripts are to be submitted in the latest version of Microsoft Word. Although any standard font can be utilized in the draft, a standard font (Times New Roman 11 pt.) will be selected for the final proof.
- 2) Type only the title, names of the authors and their affiliations, addresses, related footnotes, the assigned WRMR or WRTC or WRPR number and the year on the first page. Number all pages (bottom centre) beginning with the Introduction, including pages with tables and figures. Pages before the Introduction (Abstract, Acknowledgements, and an optional Table of Contents for more lengthy reports) are numbered with small Roman numerals.
- 3) Double-space all parts of the manuscript in the first submission, excluding tables, captions for tables and figures, footnotes and the reference list. Underline only material that is to be printed in italics (if italics are not available). Indent each paragraph 5 spaces. Use full justification. The final submission should be single-spaced (leave a space between each paragraph) and a camera-ready copy.
- 4) Headings: Do not use full-word capitals anywhere in the manuscript except for main headings. Main headings are full capitals, bold and centred. Primary subheadings are left-justified, only the first letters are capitalized, and are in bold print. Secondary subheadings are left-justified and underlined, only the first letter of each word is capitalized, and they are not in bold print.
- 5) Headers and Footers: Use only for technical circulars - procedural guide/manuals (see WRP technical circulars).

CHECKLIST FOR MANUSCRIPTS

FOR REVIEWERS

Attention to the following questions will expedite review and appraisal of manuscripts by reviewers and editors:

- 1) Are summary statements given at the beginning of sections and paragraphs, and are details in sections and paragraphs relevant to their topics? Does the organization of the manuscript follow logically from the statement of purpose in the Introduction? Would any of the text be clearer if condensed?

2) Are the findings, interpretations, and conclusions adequately documented and relevant to the purpose of the study?

3) Are all the tables and figures needed, and organized to facilitate comparisons? Are there inconsistencies between tables and figures and the text, or within the text? Should some of the data be made available separately in a data or manuscript report or at a data repository? Less related but useful ancillary data should be reported in an Appendix (as Appendix 1,2, etc.).

4) If statistical analysis is included, is it subordinate to the research? When probability statements are made, are the statistical tests cited and unnecessary statistical tables omitted? An example of reference to statistical test results is: (t-test, $p < 0.05$) or (Tukey hsd test, $p > 0.05$).

5) Does the title encompass the content of the report? Does the abstract give the essentials of the new knowledge and its implications? Is the introduction largely limited to the scope, purpose, and rationale of the study? Is review of the literature limited to defining the problem? Are details of materials and methods limited to what technicians, biologists, foresters, hydrologists and engineers need to understand the design of the study and to judge the adequacy of the data, and is there sufficient information to allow someone to duplicate the field study or experiment? Are generalizations from the results supported by the data provided? Are findings distinguished from inferences? Is the discussion limited to interpretation and significance of the findings?

FOR AUTHORS

The most common technical problems in submitted manuscripts are listed below. Authors can hasten the processing of their papers if they pay attention to these points during manuscript preparation.

1) Insert a bibliographic strip before the abstract (Authors, date, title, Province of British Columbia, Ministry of Environment, Lands and Parks, and Ministry of Forests. Watershed Restoration Management Report No. 00:00p). For consulting and forest companies include affiliation following the authors.

2) Double-space (first submission) all elements of the manuscript, excluding references, tables and captions, and figure captions and legends.

3) Use italics for Latin names of plants and animals and certain statistical and mathematical notations.

4) Use the correct SI symbols for units of measures in figures, tables, and text. Place a zero before the decimal for numbers less than unity.

5) Avoid incorrect or ambiguous forms of abbreviations or symbols, e.g., use g, not gm; use $\text{no}\cdot\text{km}^{-1}$, not #/km; use $\text{g}\cdot\text{m}^{-2}$, not g/m^2 ; use $\text{g}\cdot\text{m}^{-2}\cdot\text{yr}^{-1}$ not $\text{g}/\text{m}^2/\text{yr}$.

6) Identify the test used to test statistical significance and give the probability value. No reference is needed for common statistical tests.

7) In the text, generalize from tables and figures, and avoid repeating all the details. Be sure each table and figure can stand on its own, and is referred to in the text in numerical order. The captions should explain the purpose of the table or figure.

- 8) Include the acknowledgements section at the manuscript stage, not when the proofs arrive.
- 9) Provide the person's initials and affiliation when referring to personal communications.
- 10) Delete unnecessary references that do not apply directly to the problem.
- 11) Check references carefully against text citations and vice versa to ensure exact correspondence. Provide an availability statement for less easily retrieved material, e.g., available from the Department of Economics, Simon Fraser University, Burnaby, B.C. V5A 1S6.
- 12) Photocopies of figures are appropriate for review purposes. Send prints of figures, or originals if they do not exceed 21.5 cm X 28 cm (8.5 in. X 11 in.), when requested upon final publication. Use the same type of lettering throughout if possible. A reduced photographic print of an enlarged figure is preferred to the original drafting. Figures from dot matrix printers are unacceptable since they reproduce poorly.

ORGANIZATION OF THE MANUSCRIPT

Organize the manuscript on the basis of the purpose or scope of the study as stated in the Introduction. Ensure that the title and headings are in harmony with the statement of purpose. There is generally no Table of Contents, List of Figures, nor List of Tables unless the report is lengthy with several subsections, in which case a Table of Contents is useful.

Before writing any of the manuscript, list tentative headings in as few ranks as possible. Rework them until they appear to allow logical development for the reader (chronological order is usually not effective). The findings will be more readily appreciated if Methods, Results, and Discussion are given in separate sections, although in some technical reports, the Results and Discussion can be combined (e.g., brief reports or where diverse data sets are brought together).

Organize tables and figures to facilitate comparisons, grouping related data in as few tables and figures as feasible. As far as possible, make the tables and figures clear without reference to the text. Note that each figure and table must be cited in the text, e.g., (Table 2), or (Fig. 5).

Begin sections and paragraphs with topic sentences containing generalizations that lead readily to the particulars. Give a conclusion first and then supporting information, thus improving readability and also facilitating assessment by others.

See that everything in each section is relevant to the heading, and everything in each paragraph is relevant to the topic (opening) sentence.

Before writing any paragraphs, try writing the topic sentences for all of them, arranging these in appropriate order.

TITLE

Limit the title to what is documented in the manuscript. It is the key to the article and should clearly and concisely reveal what appears in the paper itself. A good title should attempt to indicate the result of the study although this is optional. The title serves two functions:

- 1) it allows the reader to judge whether or not the article is of potential interest and,
- 2) it should provide enough information to permit the reader to judge the scope and potential importance of the article. Words in the title should convey a maximum amount of information and identify the nature of the research, organism used, and where appropriate, the technical approach. Good titles greatly assist scientists and librarians in using scientific literature and aid indexers in preparing titles for keyword indexes.

ABSTRACT

The Abstract should succinctly mirror the content and emphasis of the paper in less than 300 words (preferably < 200 words). Like the Title, the Abstract enables readers to determine the paper's content and decide whether or not they need to read the entire article. A common practice is to begin the Abstract, which is preceded by the bibliographic strip, with the main conclusion from the study, and support it with the relevant findings. Alternatively, describe briefly what was done and then give the main conclusions. Limit details of methods to those needed in understanding what was done, and work them into statements of findings. Avoid using phrases such as "... is discussed" or "... was found". Be specific. As the Abstract is often divorced from the main body of the paper by abstracting and indexing services, and is the only part of a paper some readers ever see, it is important that it accurately reflect the paper's contents, and be completely self-contained, i.e., no references unless essential, and then only in their fully retrievable form (e.g., Sprules et al. 1991, *Canadian Journal of Fisheries and Aquatic Sciences* 48:105-115). A sample bibliographic strip and abstract is attached (Appendix 1).

ACKNOWLEDGEMENTS

We urge authors to limit acknowledgements to those who contributed substantially to scientific and technical aspects, gave financial support, or improved the quality of the manuscript.

INTRODUCTION

Limit the Introduction primarily to the scope, purpose, and rationale of the study. Restrict the literature review and other background information to that needed in defining the problem or setting the work in perspective. Try beginning with the purpose or scope of the work, defining the problem next, and adding guide-posts to orient the reader. Alternatively, describe the problem in general, using examples from the literature, and then state the purpose of the study. An introduction generally need not exceed 375-500 words. Introductions that do not relate the background of the study to published reports or papers are not acceptable.

METHODS

The Methods Section provides the framework for getting answers to the questions posed in the purpose of the work. The study area can be described under a separate subheading if extensive information is required.

Limit the information on materials and methods to what is needed in judging whether the findings are valid. To facilitate assessment and repeatability, give all the information in one section when possible. Refer to the literature concerning descriptions of equipment or techniques already published,

detailing only adaptations. It often helps to begin statements on procedures with a phrase indicating the purpose, such as "To determine...we..." If the section is long, consider using subheadings corresponding to headings for the findings (subheadings in lower case except the first letter of each word, and only primary subheadings in bold).

RESULTS

Limit the results to answering the questions posed in the purpose of the work. Give the findings as nearly as possible in the terms in which the observations or measurements were made, thus avoiding confusion between facts and inferences. State noteworthy findings to be noted in each table and figure, and avoid restating in the text what is clear from tables. Material supplementary to the text, if directly applicable, can appear in an Appendix, or (preferably) it can be placed in government archives, a regional report, progress report, or a recognized data depository, and referenced in the text.

Avoid use of "Fig. 5 shows....", or "The results are presented in Table 5 which shows....", and similar usage. Rather, state the result and cite the figure (as Fig. 5) or table in parenthesis immediately at the end of the sentence, as the evidence or support for the interpretation. Finally, no discussion material is to appear in this section unless the report is brief, thus using a combined section of Results and Discussion.

DISCUSSION

Limit the discussion to giving the main contributions of the study and interpreting particular findings, and comparing them with those of other workers. Emphasis should be maintained on synthesis and interpretation and exposition of broadly applicable generalizations to watershed management and restoration. Shortcomings or potential sources of errors must be acknowledged. If there are exceptions or unsettled points, note them and show how the findings agree or contrast with previously published work. Limit speculation to what can be supported with reasonable evidence. End the discussion with a brief summary paragraph of the significance of the work and conclusions drawn. Alternatively, create a subheading typed Management Implications. If the discussion is brief and straight forward, it can be combined with the results section.

SUMMARY

Generally a summary is unwarranted because of the abstract and statements in the discussion. In longer reports, a summary is useful when it contains a list of concluding statements or recommendations which can be more detailed than in the Abstract. These conclusions should be numbered.

REFERENCES

References should be selected judiciously and be largely restricted to significant, published literature. References to unpublished data, manuscripts in preparation, draft progress reports, and unpublished presentations at annual meetings may not be cited in the reference list but may be noted in the text as unpublished data or personal communications (include source). Unpublished Progress or Project Reports, can appear in the references without designating their manuscript status. Citations of literature in the text should be carefully checked against those in the reference list to ensure exact

correspondence. (See attached examples of reference citations which avoid abbreviations, similar to AFS publications.)

TABLES

Tables are used to present repetitive data and should be as economical of space as possible. Use horizontal lines above and below the headings and below the columns, and rarely elsewhere. Never use vertical lines - leave extra spaces instead. Table captions should be succinct and identify the purpose of the table sufficiently well enough to allow the table to stand on its own. Number each table with Arabic numerals. Indicate table footnotes by superscript small letters and type them below the table. Place the tables within the text. A sample table is attached (Appendix 2).

FIGURES

Provide photographic reproductions, the original artwork or the graphics printout (no larger than 21.5 cm X 28 cm) of each illustration. If submitting photographs, type the author's name and figure number on a strip of paper and fasten to the top of the print. Do not write on the illustration itself. Provide a single photocopy of line illustrations, graphs and photographs for review purposes.

Design figures to fit on a single page of the report and ensure that all lettering, numerals, and symbols are legible, neat, and at least 1.5 mm high. Figures should not be mounted, stapled or clipped. When possible, figures should be grouped to fill a page with the same or similar type of lettering for each figure. If necessary, figures can be inserted (full width) in the text, thus reducing pages.

Type figure captions in succession on a separate page then cut, glue or tape to the bottom of the page, or under the figure if there is more than one. Add bar scales to maps, photomicrographs and equipment diagrams.

Computer-generated figures are acceptable, but many dot-matrix printers cannot produce sufficiently dark, solid lines to ensure legibility. Figures drafted in black India ink are acceptable. If sheets of printed characters are used, be sure they adhere completely.

Draft, rather than type, axis labels for graphs unless the type is high quality. Figures produced in Microsoft Excel, PowerPoint, Harvard Graphics or similar graphics software are acceptable if printed on a laser printer. If these programs are used, the legend should be placed within the figure, and the caption placed in standard type printed at the bottom. The y axis title can be either placed along the axis (to be read from the side), or at the top corner(s) (i.e., Harvard Graphics). The former is preferred, but not essential. A sample figure is attached (Appendix 3).

Colour plates are very expensive to produce and should only be used where colours are essential to the understanding of the text. Submit only the most outstanding photographs for colour reproduction. Black and white photos of high quality are preferred because of their low cost to reproduce.

If there are a large number of figures (e.g., numbers and size frequencies), then they can be placed after the text of the report, rather than as separate pages within the text. This is a common practice for project reports because it is more efficient for authors.

MATHEMATICAL FORMULAE

Leave a line space above and below lines that have much material in superscripts, and above and below equations and formulae. In the various expressions, place each component in its correct position.

Show all symbols clearly. In the margin, spell out Greek letters the first time they occur, and distinguish between the small letter "l" and the number one, and between the capital "O" and the numeral zero. Make other explanatory notes similarly.

ABBREVIATIONS

Abbreviate terms denoting units of weight and measurement in the text only when they are preceded by numerals.

calorie	cal
centimetre	cm
centimetre, squared	cm ²
centimetre, cubic	cm ³
centimetre per gram per second	cm·g ⁻¹ ·s ⁻¹
day	d
decimetre	dm
degree Celsius	°C
degrees of freedom	df
fish per square metre	fish·m ⁻²
gram	g
hectare	ha
hertz	Hz
hour	h
joule	J
kilograms	kg
kilograms per hectare	kg·ha ⁻¹
kilometre	km
litre	L
lumen	lm
metre	m
metre, squared	m ²
metre, cubic	m ³
metre, cubic per second	m ³ ·sec ⁻¹
microgram	µg
micrograms per litre	µg·L ⁻¹
micrometre	µm
milligram	mg
millilitres	mL
millimetre	mm
millimetre, squared	mm ²
minute	min
molar mass	M
mole	mol

month	mo
number	no
Pascal	Pa
second	s
standard deviation	SD
standard error	SE
tonne	t
volt	V
volume	vol
watt	W
week	wk
year	yr

WORD LIST

The spelling of the following words is frequently inconsistent in submitted manuscripts. We prefer that authors adhere to the Canadian Journal of Fisheries and Aquatic Sciences style for these commonly used terms:

age-class (n.)	open water (n.)
age-group (n.)	open-water (adj.)
aquaculture (n.)	percent (n.)
Arctic char (n.)	salt water (n.)
brackish water (n.)	saltwater (adj.)
brackish-water (adj.)	sea-run (adj.)
chi-square (n., adj.)	seawater (n., adj.)
cold water (n.)	shallow water (n.)
cold-water (adj.)	short term (n.)
deep sea (n.)	stream bank (n.)
deep-sea (adj.)	streambank (adj.)
deep water (n.)	streamflow (n.)
deepwater (adj.)	off-channel (adj.)
freshwater (n., adj.)	overwinter (n., adj.)
fresh water (n.)	size-class (n.)
groundwater (n., adj.)	snowmelt (n.)
hard water (n.)	soft water (n.)
hardwater (adj.)	softwater (adj.)
headwater (n., adj.)	tidewater (n., adj.)
hillslope (n.)	t-test (n., adj.)
lake water (n., adj.)	warm water (n.)
mainstem (n., adj.)	warmwater (adj.)
meltwater (n., adj.)	year-class (n.)
shallow-water (adj.)	young-of-the-year (n., adj.)

REFERENCE CITATIONS IN TEXT

Name-and-year System

The name-and-year system of citation is utilized - that is, the surname of the author(s) and the year of publication are inserted in the text at an appropriate point: "Brown (1983) compared..." or "... were compared (Brown 1983)." If the reference has more than two authors, include only the surname of the first author followed by "et al." (not italicized): "Brown et al. (1983) compared..." or "... were compared (Brown et al. 1983)."

Personal Communications

Personal communications are not listed in the reference list. Using parentheses in the text, state the name and affiliation (include mailing address, if necessary) of the communicator followed by "pers. comm."

Unpublished Data

If an unpublished paper or article has been accepted for publication in a journal, list it in the reference list section followed by the notation "In press.". Only those manuscripts that are in proof or for which there is an acceptance letter can be considered in press. If the article has been submitted and accepted but the review process is incomplete, state the author(s) and year followed by the notation "In prep.", and list it in the reference list with that notation after the year. If the article is submitted but not yet accepted, state the author and year of the unpublished material, followed by the notation "unpubl. data" or "unpublished report". Unpublished reports are normally not cited in the reference list.

REFERENCE LISTS

The following bibliographic citations illustrate the punctuation and style for references. Citations in foreign languages should have the appropriate accents.

Journal Article

Klassen, H.D., and T.G. Northcote. 1986. Stream bed configuration and stability following gabion weir placement to enhance salmonid production in a logged watershed subject to debris torrents. *Canadian Journal of Forest Research* 16:197-203.

Ward, B.R., and P.A. Slaney. 1988. Life history and smolt-to-adult survival of Keogh River steelhead trout (*Salmo gairdneri*) and the relationship to smolt size. *Canadian Journal of Fisheries and Aquatic Sciences* 45:1110-1122.

Entire Issue of Journal

Marier, J.H., L.C. Neri, and T.W. Anderson. 1979. Water hardness, human health and the importance of magnesium. National Research Council of Canada, Environmental Secretariat Publication NRCC 7581:1-119, Ottawa, ON.

Book

- Carlander, K.D. 1977. Handbook of freshwater fishery biology, volume 2. Iowa State University Press, Ames, IA.
- Gray, H.G., and A.T. Leiser. 1982. Biotechnical slope protection and erosion control. Van Nostrand Reinhold Company Incorporated, New York, NY.

Part of Book

- Healey, M.C. 1980. The ecology of juvenile salmon in Georgia Strait, British Columbia. Pages 203-229 in W.J. Neil and D.C. Himsworth [eds.]. Salmonid ecosystems of the North Pacific. Oregon State University Press, Corvallis, OR.

Corporate Author

- USEPA (U.S. Environmental Protection Agency). 1983. Methods for chemical analysis of water and wastes. USEPA, Office of Research and Development, Environmental Monitoring and Support Laboratory, Cincinnati, OH.

Published Technical Reports

- Bryant, M.D. 1985. Changes thirty years after logging in large woody debris, and its use by salmonids. U.S. Forest Service General Technical Report RM-120:329-334.
- Chatwin, S.C., D.E. Howes, J.W. Schwab, and D.N. Swanston. 1991. A guide for management of landslide-prone terrain in the Pacific Northwest. Province of British Columbia, Ministry of Forests, Research Branch, Land Management Handbook No. 18:212p.
- Hogan, D.L. 1986. Channel morphology of unlogged, logged and debris torrented streams in the Queen Charlotte Islands. Province of British Columbia, Ministry of Forests and Lands, Land Management Report No. 49:94p.
- Keeley, E.R., and C.J. Walters. 1994. The British Columbia Watershed Restoration Program: summary of the experimental design, monitoring, and restoration techniques workshop. Province of British Columbia, Ministry of Environment, Lands and Parks and Ministry of Forests, Watershed Restoration Management Report No. 1:34p.
- Moore, G.D. 1994. Resource Road Rehabilitation Handbook: Planning and implementation guidelines (Interim Methods). Province of British Columbia, Ministry of Environment, Lands and Parks and Ministry of Forests, Watershed Restoration Technical Circular No. 3:115p.

Unpublished Manuscripts or Project Reports

- Sebastian, D. 1989. An analysis of rainbow trout (*Oncorhynchus mykiss*) production in the Kettle River System in south central B.C. Province of British Columbia Fisheries Project Report No. FAUI-3:51p.

Theses

- Yule, D.L. 1992. Investigations of forage fish and lake trout interactions in Flaming Gorge Reservoir, Wyoming-Utah. MSc thesis. Utah State University, Logan, UT.

Appendix 1. A sample bibliographic strip and abstract.

ABSTRACT

Larkin, G.A., and P.A. Slaney. 1996. Trends in marine-derived nutrient sources to south coastal British Columbia streams: impending implications to salmonid production. Province of British Columbia, Ministry of Environment, Lands and Parks, and Ministry of Forests. Watershed Restoration Management Report No. 3:56p.

Marine nutrients and carbon transported from the sea by adult salmon migrants are significant and important to the productivity of the oligotrophic lakes and streams in which they spawn. Past land-use practices and salmon harvesting are well known to have reduced the availability of salmonid carcasses to some streams, resulting in a decline in marine-derived nutrient and carbon sources for stream-rearing salmonids, including coho and chinook salmon, steelhead and cutthroat trout and char. Forty-two years of escapement records for five species of Pacific salmon were examined for Georgia Strait, the west coast of Vancouver Island, and the mainland coast of British Columbia, to estimate the status of nutrient sources. Salmon stocks from enhanced streams frequently dominated escapements for entire regions, and as a result, the majority of the incoming marine nutrients are focused towards large stream systems already undergoing significant salmon enhancement, while nutrient influx to smaller, unenhanced streams has declined. In streams with smaller escapements, stocks already in decline are predicted to decrease further in a negative feedback loop because of lessened biological productivity and the size-dependent survival of stream-rearing salmonid species. Recent declining trends in nutrient influxes to unenhanced streams in most regions are a cause for concern and more intensive examination. A recent cyclical depression in the survival of south coastal anadromous salmonids in the North Pacific Ocean is also an additive factor responsible for declining salmon escapements. Escapement targets used in wild salmon stock management need to include an allotment of spawners to provide the nutrient influx linked to the maintenance of stream productivity. As well as managing for greater salmon escapements, an external nutrient source to oligotrophic streams may be selectively needed in the interim to increase stream productivity until logging-impacted watersheds are rehabilitated and the nutrient influx from carcasses of returning wild salmon spawners returns to historic levels.

Appendix 2. A sample table.

Table 5-1. Swimming and jumping capabilities of some salmonids (adapted from Dane 1978).

Species and Lifestage		Maximum Swimming Speed ($\text{m}\cdot\text{s}^{-1}$)			Maximum Jump Height (m)
		Sustained	Prolonged	Burst	
coho/chinook:	adults	2.7	3.2	6.6	2.4
	juveniles (120 mm)		0.6		0.5
	juveniles (50 mm)		0.4		0.3
sockeye:	adults	1.0	3.1	6.3	2.1
	juveniles (130 mm)	0.5	0.7		
	juveniles (50 mm)	0.2	0.4	0.6	
chum/pink:	adults	1.0	2.3	4.6	1.5
steelhead	adults	1.4	4.2	8.1	3.4
cutthroat/rainbow:	adults	0.9	1.8	4.3	1.5
	juveniles (125 mm)	0.4	0.7	1.1	0.6
	juveniles (50 mm)	0.1	0.3	0.4	0.3
Arctic grayling	adults	0.8	2.1	4.3	1.0
whitefish	adults	0.4	1.3	2.7	1.0

Appendix 3. A sample figure.

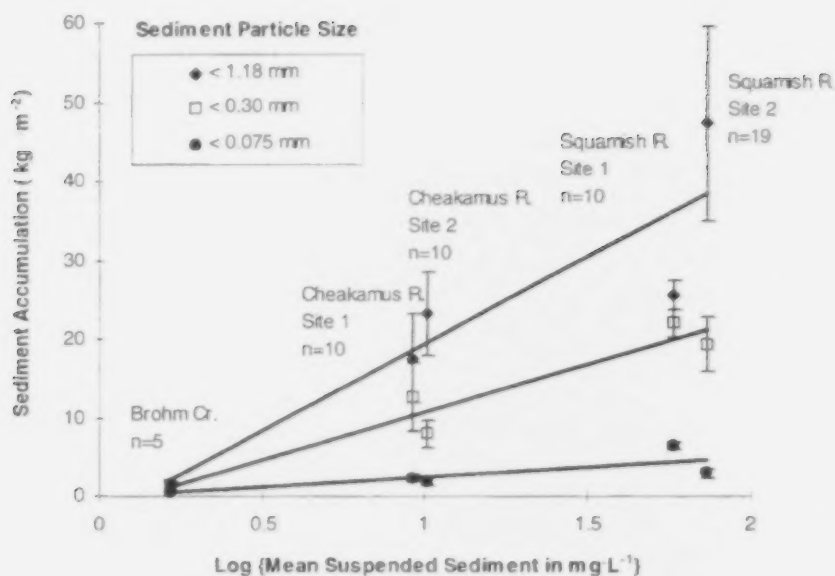


Figure 6. Log mean suspended sediment concentration versus sediment accumulation (~60 days) of three sediment size categories. (Error bars = ± 1 Standard Error.)